Notebook Series -- Notebooks by Experimenters Other Than Edison
General Experiment Books - P. C. Christensen Book
Notebook, N-12-04-19

This notebook was used by Peter C. Christensen during March 1912-September 1913 for experimental notes on a variety of subjects. The entries at the beginning of the book contain data on rust experiments with nails. There are also experiments on dissolving ferric hydroxide and purifying graphite, along with tests on asphalt, violin rosin, and celluloid film Other entries pertain to experiments with regenerating battery components. In the middle of the book is a series of experiments on wax, numbered from 1 through 37, with a few comments by Edison. Related material can be found in N-13-08-25.2, Notebooks by Edison. The pages are unnumbered. Approximately 150 pages have been used.

Only the 33 pages relating to wax testing have been selected.

Tests on Asphalt
Diss. in Alcohol Dm. | #1

#1	Asphaltum #1
2	Asphaltum #2
3	Asphaltum #3
4	Special Selected Gilsonite
5	Dragn. Hard Refd Asphaltum
6	A" Cal. Asphaltum
7	B" "
8	Hard" Cuban asphalt
9	Carolute
10	Stadlin Pitch
11	Trinidad Asphalt
12	Soft Mexican asphalt
13	Hard Mexican "
14	Prime Cuban
15	Bitumen

Montane Wax

1	Tetrachlornaphtalin	soft
2	Camphor	
3	Camphor & Tetra	
4	Camphor & Tetra & mon. Wax	
5	Dibromanthracen	
6	Trichlorquinone	
7	Benzidine Base	
8	Hexachlorbenzen	
9		
10		
11		
12		
13		
14		

C633

1

1 Stearic
1 Ceresin
4 Montan Crude
Moulds good at 110 °C
Mould heated to 100 °C

2

2 ceresin
6 Montan crude
2 graphite or 25%
Moulds good at 105° C
Mould heated to 105° C
one mould cracked in two places toward the end but was perfectly flat – second is good but very slightly bucked in center

3

1 ceresin
5 Montan crud
Moulds good and dont stick it cracked in two places toward the edge but it is perfectly straight
Wax 105 °C – Mould 100 °C

4

1 ceresin
2 Syrian Asphalt
3 Montan Crude
Mould 105° C Wax 130° C
First mould cracked in 3 places and stuck, second came off pretty good chips deep on edge one place slight rise in center

5

1 Cerusin
2 Syrian asphalt
3 Montan Crude
10 % – Dixon Graphite #095
Mould 105°C Wax 125°C
cast came off good except sticks somewhat in center chipped slightly on edge in one place and over the edge another place surface a bit foggy

6

1 Cerusin
1 Syrian asphalt
3 Montan Crude,
15 % Graphite Dixon #095
Mould 105–0C Wax 125°C
cast comes off very good no cracks center raised a little and chipped a bit on edge

7.

1 Cerusin
4 Montan Crude
25 % #95 Dixon Graphite
first mould 105°C – (150–°C – wax)
The casting cracked [illegible] to stop [illegible]
second mould 105°C – [illegible] 125°C
This [illegible] line [illegible] buckled a little and chipped [illegible] one place
(very slow cooling)

8

2 Cerusin
6 Montan crude
3/10 of 10% of oil black J
Mould 100°C – Wax 120°C
First cast cracked in half
second at same temperature – cracked in one place towards center and chipped edge in two places slightly buckled

9

2 Cerusin
6 Montan Crude
2 Utah Gilsonite
25 % # 97 Dixon Graphite
Mould 100 °C Wax 150 °C
This first cast was cooled very slow
Top and bottom it came off perfect
except a very small dent in center
and chipped on edge half way round
and very slightly buckled
(second cast 100 °C Mould - Wax 135 °C
come off flat & Perfect chipped
on edge 1 strip 2 in long
mould also cool very slow

10

2 Cerusin
6 Montan
2 Utah Gilsonite
40 % # 97 - Dixon Graphite
First cast - Mould 103 °C Wax 125 °C
came off extra good slow cooling
chipped edge front of mould

11

2 Cerusine
6 Montan
2 Gilsonite Utah
60 % # 097 Dixon Graphite
Mould 100 °C Wax 125 °C
casts came of extra good no
defects on round all except
slightly buckled in center

12

4 Cerasin
6 Montan
2 Gilsonite
100 % Graphite Dixon #97

#12-1
Came off good but buckled in center
weight put on center at 11-a.m.-

#12-2-
Came off flat and very good

13

To-1,400 grams of wax from Lot #12
we added 226 gr of yellow Bees wax
Mould 130 pcf- Wax 135°C
This cast came off very flat
and perfect all over

#13
I made up as follows in grams

2 cerasin
2 Utah Gilsonite
6 Montan wax
10 Dixon graphite #097
3 Bees wax

14

2 Cerium
6 Titanium
12 Graphite 097
3 Chromium yellow
Mould 120°C - Wax 130°C
Plate could down till the whole plate was complete cooled off -
Small tip plate pulled when wax surface was almost set -
Record cracks in all sections but did not stick much to table

15

4 Gilsonite
6 Titanium
10 Graphite 097
3 Beeswax
Mould 125°C - Wax 150°C
Cooling as on # 14
First Set came off absolut perfect
Did not stick to table

Looks good under Micro, Can see chatter marks + nothing seems to stick to mould —

Vacuum seems as good as without but we found alot of dirt which we must try to pulle out

16

6 Bees wax
6 Montan
10 Graphite
Mould 125°C Wax 150°C
N G Cracked

17

4 Beeswax
6 Montane
10 Graphite
Mould 125°C - Wax 150°C

N.G. Cracked

18

2 ceresine
6 Montan
2 California asphalt
10 Graphite

We did not mould this because to [illegible] melting point - too thick for pouring

N.G.

19

5 gelsonite
4 Montan
2 Bitumen
perfectly flat, nearly good
Edge chipped out &
its too sticky little
spots stick to/moved
Wants less gelsonite
or Bitumen

20

4 Gilsonite
6 Grantan
10 graphite # 097
3 Cohesin
Mould 135°C Max 150°C
Works same as No 15

21

4 Gilsonite
6 Candellilla wax
10 Graphite 097
3 Beeswax

This mixture is the same as #15 only the Montan wax is substituted by Candellilla wax. The wax and graphite mixed together and strained ~~to~~ through a 200 screen. Mould 125°C - Wax 170°C
The first cast came off absolutely perfect
But it seems as it comes off better from mould but under Micro. it shows - it sticks to mould very fine specks.

22

4 Gilsonite
6 Candellilla wax
2 Beeswax
10 Graphite 097

Wax 185°C - Mould 125°C

(First cast very perfect)

but same trouble as on #21

22-A

same as No 22 - with only 1 Beeswax and it works same as #22

23

4 Gilsonite
6 Candellilla
10 Graphite .097
Mixture same as #22

Cast came same as #22

but same trouble as on #21

24

4 gilsonite
9 Candellilla
13 Graphite .097
26

2 gilsonite
$9\frac{1}{4}$
$14\frac{3}{4}$ #25
see over

#24 First cast came off very good looked perfect under Micro (T.A.E) did not stick to mould or label but stuck in several places on margin (due to ring was not down to plate)

25

2 Gilsonite
9 1/2 Candelilla
14 3/4 Graphite 097

Mould 130°C
Wax 210°C

It looks as this is too high a temp for the wax and even then the wax looks to be too thick for use

but the first cast came off very good and very perfect under Mixed T.O.S

26

2 gilsonite
12 Candelilla
12 Graphite 097

Mould 130°C
Wax 175°C
First cast stuck on mould a very small speck but came off very easy and flat

27

12 Candelilla
12 Graphite 097

Mould 130°C
Wax 190°C

The wax was too hot too think
It has no body to it and
was not very good
first cast stuck all around
the edges of mould but
Pressure Tight to oil

28

4 Gilsonite
12 Candelilla

Mould 130°C
Wax 150°C

First Cast Flat almost
but it cracked all around the
Edge towards the centre each
about an inch long in about
10 places
under micro it shows sticking
to mould (T.M.E.)

29

1 Candelilla

work and looks just as
28
somewhat more cracked
and stuck less to mould

30

1 Candelilla
2 Strontia Carbonate
(125°C mould) Wax 205°C
Too thick for moulding
but cast has a very good
surface and comes from mould
very easy but cast cracked
in half

The following Batches were given to Moore

which he mixed as follows

1

6 Gilsonite
7 Candelilla

2

6 Gilsonite
7 Candelilla
10 Graphite 97

3

8 Gilsonite
6 Candelilla

4

8 Gilsonite
6 Candelilla
10 Graphite 97

5

5 Gilsonite
8 Candelilla

31

4 Gilsonite
2 Candelilla
4 Montan Crude

Tried 3 castings of this and every one cracked badly - and also showed sticking to mould

first cast [illegible] conditions

second cast cooled very slow

third cast cooled very quick

32

4 gilsonite
4 Manitou
1 Cousine
12 Candelilla

somewhat better than

31 that is it held
not crack so bad

33

4 gilsonite
4 Manitou
2 Cougar
12 Candelilla

This does a good deal
better than #132

34

4 Gilsonite
4 Mentan
3 Cerisin
12 Candellilla

This batch we went to
Three to cast

35

4 Gilsonite
4 Mentan
2 Cerisin
1 Paraffin
12 Carnauba

This cast did not stick
so bad to the mold as did
#31-32-33 - stuck off center
of mold - and broke in two
places on the edge surface
pretty good
probably better than #33

36

4 gilsonite
8 Montan
12 Candilillia
3 Ceresine

} (For Moore)

37

4 Gilsonite
4 Montan
12 Candillia
3 Paraffine

} (For Moore)